WHAT IS CLAIMED IS:

1. A method of forming a pattern, which comprises:

forming a first resist film on a surface of a substrate;

patterning the first resist film to form a first resist pattern; and

forming a covering layer containing silicon or a metal on the first resist pattern by making use of a coating method using a solution containing a solvent which is incapable of dissolving said first resist.

2. The method according to claim 1, wherein said covering film contains one selected from the group consisting of silicon, Al and Ti.

3. The method according to claim 2, wherein said covering film contains one selected from the group consisting of a water-soluble polymer containing silicon, a water-soluble polymer containing alumina and a water-soluble polymer containing titania.

4. The method according to claim 3, wherein said water-soluble polymer containing silicon comprises polysilsesquioxane or a water-soluble spin-on glass.

5. The method according to claim 1, wherein said solvent which is incapable of dissolving the first resist is at least one selected from the group consisting of water, alcohol, anisole and aliphatic hydrocarbon.

6. The method according to claim 1, which further comprises heating the covering layer.

7. The method according to claim 1, which further comprises forming a second resist film on the substrate prior to forming the first resist film.

8. The method according to claim 7, which further comprises:

etching or polishing a surface of the covering layer until a surface of the first resist pattern is exposed, thereby allowing said covering film to be selectively left remain in an opened portion of the first resist pattern; and

etching the first resist pattern and the second resist pattern with the residual covering layer being employed as a mask to thereby form a second resist pattern.

9. The method according to claim 8, wherein said surface of the covering layer is etched by means of reactive ion etching method, or polished by means of chemical mechanical polishing method.

10. The method according to claim 8, wherein said surface of the covering layer is wet-etched by making use of one selected from the group consisting of water, an acidic aqueous solution and an alkaline aqueous solution.

11. A method of forming a pattern, which comprises:

forming a first resist film on a surface of a substrate;

patterning the first resist film to form a first resist pattern;

forming a covering layer containing silicon or a metal on a surface of the first resist pattern by making use of a coating method using a solution containing a solvent which is incapable of dissolving said first resist; and

wet-etching a surface of said covering layer until a surface of the first resist pattern is exposed, thereby allowing said covering film to be selectively left remain in an opened portion of the first resist pattern;

wherein said forming of said covering layer and said wet-etching are continuously performed by making use of an apparatus provided with a coater and a wet etcher.

12. The method according to claim 11, wherein said covering film contains one selected from the group consisting of silicon, Al and Ti.

13. The method according to claim 12, wherein said covering film contains one selected from the group consisting of a water-soluble polymer containing silicon, a water-soluble polymer containing alumina and a water-soluble polymer containing titania.

14. The method according to claim 13, wherein said

water-soluble polymer containing silicon comprises polysilsesquioxane or a water-soluble spin-on glass.

15. The method according to claim 11, wherein said solvent which is incapable of dissolving the first resist is at least one selected from the group consisting of water, alcohol, anisole and aliphatic hydrocarbon.

16. The method according to claim 11, which further comprises heating the covering layer.

17. The method according to claim 11, which further comprises forming a second resist film on the substrate prior to the forming of the first resist film.

18. The method according to claim 17, which further comprises etching the first resist pattern and the second resist pattern with the residual covering layer being employed as a mask to thereby form a second resist pattern.

19. The method according to claim 11, wherein said surface of the covering layer is wet-etched by making use of one selected from the group consisting of water, an acidic aqueous solution and an alkaline aqueous solution.

20. A method of manufacturing a semiconductor device, which comprises:

forming a first resist film on a surface of a substrate;

patterning the first resist film to form a first

resist pattern; and

forming a covering layer containing silicon or a metal on the first resist pattern by making use of a coating method using a solution containing a solvent which is incapable of dissolving said first resist.